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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LANDAU, MATTHEW C

ART UNIT

PAPER NUMBER

2815

DATE MAILED: 12/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/839,139

Applicant(s)

NAGAI ET AL.

Examiner

Matthew Landau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 17-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16, 23 and 24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of Invention I, claims 1-16, 23, and 24, in Paper No. 4 is acknowledged. The traversal is on the ground(s) that "the inventions of Groups I-V are so closely related in the field of semiconductor manufacture, using an exposure apparatus that includes a wavelength changing device for changing an oscillation wavelength of a laser beam, that a proper search of any of the claims would, of necessity, require a search of the others." This is not found persuasive because the search for the maintenance method step of "authorizing access from the semiconductor manufacturing factory to the maintenance database via the external network" is not required in the search for the laser oscillation apparatus.

The requirement is still deemed proper and is therefore made FINAL.

Claims 17-22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 4.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 23 recites the limitation "the computer network" in line 10. There is insufficient antecedent basis for this limitation in the claim.

*Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 4, 6, 9, and 10-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Wakabayashi et al. (US Pat. 5,373,515, hereinafter Wak '515 ).

In regards to claim 1, Figure 1 of Wak '515 discloses a laser oscillation apparatus comprising wavelength change means (8,9,10) for driving a wavelength selection element 2 and changing an oscillation wavelength of a laser beam to a target value (column 2, lines 6-22). The intended use limitation beginning "wherein said wavelength change means...." does not structurally distinguish the claimed invention over Wak '515.

In regards to claim 4, the intended use limitation beginning "wherein thresholds are set...." does not structurally distinguish the claimed invention over Wak '515.

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In regards to claim 6, Figure 1 of Wak '515 discloses a wavelength measuring means 8 for measuring the oscillation wavelength of the laser beam.

In regards to claim 9, the intended use limitation beginning "wherein whether the measured oscillation wavelength..." does not structurally distinguish the claimed invention over Wak '515.

In regards to claim 10, the intended use limitation beginning "wherein output of the laser..." does not structurally distinguish the claimed invention over Wak '515.

In regards to claim 11, the intended use limitation beginning "wherein output of the laser..." does not structurally distinguish the claimed invention over Wak '515.

In regards to claim 12, the intended use limitation beginning "wherein no test laser..." does not structurally distinguish the claimed invention over Wak '515.

In regards to claim 13, Wak '515 discloses the wavelength selection element 2 includes a grating (column 4, lines 22-26).

In regards to claim 14, Wak '515 discloses the laser beam includes an excimer laser beam (column 1, lines 9-14).

4. Claims 1, 6, 7, 8, 15 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Shinonaga et al. (US Pat. 5,838,426, hereinafter Shinonaga).

In regards to claim 1, Figure 1 of Shinonaga discloses a laser oscillation apparatus comprising a wavelength change means 32 for driving a wavelength selection element 29 and changing an oscillation wavelength of a laser beam to a target value. The intended use limitation

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beginning “wherein said wavelength change means...” does not structurally distinguish the claimed invention over Shinonaga.

In regards to claim 6, Figure 1 of Shinonaga discloses a wavelength measurement means for measuring the oscillation wavelength of the laser beam (column 6, lines 51-56).

In regards to claim 7, Figure 1 of Shinonaga discloses an internal environment measurement means 20 for measuring an internal environment of said wavelength measurement means. The intended use limitation “said wavelength measurement means is corrected based on the measure internal environment of said wavelength measurement means” does not structurally distinguish the claimed invention over Shinonaga.

In regards to claim 8, Figure 1 of Shinonaga discloses the internal environment of said wavelength change means includes a temperature.

In regards to claim 15, Figure 1 of Shinonaga discloses an exposure apparatus using a laser oscillation apparatus as a light source, wherein the laser oscillation apparatus comprises a wavelength change means 32 for driving a wavelength selection element 29 and changing an oscillation wavelength of a laser beam to a target value. The intended use limitation beginning “wherein said wavelength change means...” does not structurally distinguish the claimed invention over Shinonaga.

In regards to claim 16, the intended use limitation beginning “wherein the oscillation wavelength...” does not structurally distinguish the claimed invention over Shinonaga.

5. Claims 1, 4, and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Wakabayashi et al. (US Pat. 5,142,543, hereinafter Wak ‘543).

In regards to claim 1, Figure 1 of Wak '543 discloses a laser oscillation apparatus comprising a wavelength change means 300 for driving a wavelength selection element (101,102) and changing an oscillation wavelength of a laser beam to a target value. The intended use limitation beginning "wherein said wavelength change means..." does not structurally distinguish the claimed invention over Wak '543.

In regards to claim 4, the intended use limitation beginning "wherein thresholds are set..." does not structurally distinguish the claimed invention over Wak '543.

In regards to claim 5, Figure 1 of Wak '543 discloses a shutter 108. The intended use limitation beginning "wherein a shutter is closed..." does not structurally distinguish the claimed invention over Wak '543.

6. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Tuganov et al. (US Pat 6,434,173, hereinafter Tuganov).

In regards to claim 1, Figures 2 and 3 of Tuganov disclose a laser oscillation apparatus comprising a wavelength change means 230 for driving a wavelength selection element (340,350) and changing an oscillation wavelength of a laser beam to a target value (column 2, lines 40-60). The intended use limitation beginning "wherein said wavelength change means..." does not structurally distinguish the claimed invention over Tuganov.

In regards to claim 2, Figure 2 of Tuganov discloses an oscillation history memory means 208 for storing an oscillation state of the laser beam as an oscillation history. The intended use limitation beginning "said wavelength change means calculates..." does not structurally distinguish the claimed invention over Tuganov.

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In regards to claim 3, the intended use limitation beginning wherein the oscillation history includes..." does not structurally distinguish the claimed invention over Tuganov.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 15, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tuganov in view of Nakamura.

In regards to claim 15, the difference between Tuganov and the claimed invention is the laser oscillation apparatus used in an exposure apparatus. Figure 1 of Nakamura discloses a laser light source 1 used in an exposure apparatus. In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to modify the invention of Tuganov by using the laser oscillation apparatus in an exposure apparatus. The ordinary artisan would have been motivated to modify Tuganov for the purpose of projecting a pattern on to a semiconductor wafer.

In regards to claim 23, Figures 1 and 2 of Tuganov disclose a display 200, a network interface 102, and a computer 114 for executing network software. The intended use limitation "maintenance information of the exposure apparatus can be communicated via the computer network" does not structurally distinguish the claimed invention over the prior art.



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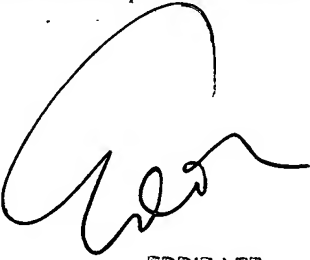
In regards to claim 24, the intended use limitation beginning "characterized in that the network software..." does not structurally distinguish the claimed invention over the prior art.

***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew C. Landau whose telephone number is (703) 305-4396.

The examiner can normally be reached from 8:00 AM-4:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (703) 308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

  
EDDIE LEE  
SUPERVISOR/PERKINS EXAMINER  
TECHNICAL CENTER 8000

Matthew C. Landau

Examiner

December 10, 2002